

ABSTRACT OF THE DISCLOSURE

An apparatus comprises one or more pairs of mutually coaxial and opposing linear measuring devices including movable, biased fingers for simultaneously determining the thickness and warpage of a substrate such as a circuit board passing between the fingers. Each measuring device is calibrated to a zero point by bringing the ends of the movable fingers together and recording the distance or position thereof. Data for computation of substrate thickness and warpage measurements is obtained by recording displacement distances or positions of the movable fingers in contact with opposing surfaces of the substrate with respect to the zero point, the thickness and warpage then being calculated. The apparatus may be integrated with an assembly line, including incorporation with an existing piece of equipment, so that substrates exhibiting out-of-specification thickness or excessive warpage may be reworked, discarded or downgraded during the manufacturing process.

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